by purifying the commercial veratria, was administered in the dose of one-third of a grain, to a dog weighing 25 lbs., the pulse was likewise only moderately reduced, viz: from 132 to 100, the attendant effects being very much the same as those just described.

"Judging from these parallel experiments, and from the fact that the resin exists in very much larger quantity, than the alkaloid, in this drug, it would appear that the sedative action of veratrum viride is due in greater degree to the alcoholic resin it contains than to its veratria.

"I may add that the action of the resin upon the human system produces results very similar to those just described. On the 14th inst., at 5.15 P. M., I took two grains of the alcoholic resin. Pulse 80. At 6.45, its effects were first apparent in slight spasmodic contractions of the muscles of the leg—these soon passed off and were not afterwards noticed. At 7.45, free vomiting began, accompanied with an increased flow of saliva and general perspiration; the vomiting continued at intervals for upwards of an hour, and until considerable bile had been thrown up; and was followed by painful retching: at 8.45, pulse 60—by this time the feeling of warmth had been succeeded by general coldness of the body and loss of strength. At 9.15, pulse 55. At 9.30 fell asleep. The only effects observed in the morning were general weakness, and a somewhat depressed pulse. No tingling of the skin so frequently occasioned by veratria, nor catharsis, was produced.

"The resin thus experimented with is of a soft consistence, and of a mild, oily, though nauseous taste at first, but leaving after some time a somewhat acrid sensation in the fauces. It is of a brownish-black color. It yields to ether its more oily portion, about one-quarter its weight,—the remainder, insoluble in that menstruum, is left of a harder and more friable consistence. In order to remove any suspicion that the medicinal action of the resin was due to a minute quantity of the alkaloid remaining in it, I administered three-quarters of a grain of the residue left after treating the alcoholic resin with ether (which would have removed any veratria if present) to a half-grown cat. Its effects were very similar to those of the alcoholic resin before mentioned, vomiting, dilatation of the pupils, slight spasms of the muscles, slow breathing, and reduction of the pulse from the neighbourhood of 100 to 42, were produced in the course of a few hours.

"The quantity of resin obtained from 1 lb. avoir. of the dried root of veratrum viride may be stated at about 300 grains—of veratria about 30 grains. From its reaction with sulphuric acid, the tinct. iodine test, and a solution of the iodo-hydrargyrate of potassium, I am of the opinion that it may perhaps be an altered form of veratria. I have not succeeded in detecting the presence of sabadillia. The existence of jervia in the filtrate from which the veratria was precipitated, was thought probable from the white precipitate which was produced in it upon the addition of sulphuric acid."—*Proceed. Am. Pharm. Assoc.*, 1862, and *Am. Journ. Pharm.*, Jan. 1863.

Operation for Compression of the Spinal Cord.—Dr. H. A. POTTER, of Geneva, N. Y., relates (*American Med. Times*, Jan. 10, 1863) the following case of this:—

"A. M. Salsbury, of Phelps, Ontario County, New York, while engaged in gathering walnuts, in October, 1859, fell from a tree a distance of twenty feet, and fractured certain vertebræ in the inferior cervical region. Three days after the accident I was called in consultation. The patient was perfectly conscious, but was unable to move any part of the body or extremities, except the hands, which he could slightly raise, but which would fall upon reaching a certain point, without the least control of the will over them. Sensation was as imperfect as the motion. The patient being a fleshy man, it was difficult to determine the exact point of injury.

"It was decided I should operate, which I did, October 9, 1859. I found the spinous process of the sixth vertebra fractured and displaced, and the arch of the fifth crushed in upon the spinal cord, nearly separating it longitudinally. With some difficulty I removed all that portion comprised in the lamina and spinous process of the fifth and the spinous process of the sixth cervical ver-

tebræ. The sheath of the spinal cord was entire, but, as before stated, the cord itself was much injured.

"I did not see the patient again until the following January, at which time the wound was nearly healed, and he was as comfortable as could be expected; he could sit in an easy chair, could readily move his head, and could converse as freely as any one. He had gained very little from the operation—sensation and motion being as imperfect as when first injured, except that he could use his left hand a little more freely than before. He remained in this unhappy condition until November 29, 1862, when I was again called to see if something might be done to relieve him. During the past three years there had been some spasmodic action of the lower extremities, and thinking that some compression might still exist—which, from the stout and fleshy condition of the neck, had escaped detection in my first examination—and as the situation of the patient could not be made worse, I determined upon another operation, which was made in the presence and with the assistance of Dr. Dox, of Geneva, and Dr. Carpenter, of Phelps.

"I removed the fourth, sixth, and seventh cervical vertebræ, which left the portion of the spinal cord covered by the four inferior cervical vetebræ entirely exposed. The cord had not united, but at the point of the first operation it was well protected by a thick substance, resembling the coat of a large artery. At least an inch of the superior portion of the exposed part was much flattened and thinned, but the sheath was entire. At the connection of the first dorsal vertebra the cord was full, and, to all appearance, in a normal condition. There was no pulsation at any point exposed, but there had been at the first operation; and, in my judgment, the pulsation of the cord will determine very correctly the diagnosis as to the extent of the injury. In two cases upon which I had previously operated, the cord could not be only felt but the *pulsation could be distinctly seen.* In both cases it was simply the yoking in, as it were, of the arch of the vertebra upon the spinal cord—the cord not being in the least separated. The first case was of five months' standing, and was the most perfect instance of paralysis and loss of sensation I have ever seen. A report of the same may be found in the *Journal of Medicine and Collat. Sciences* for March, 1844. It was, I believe, before the time of chloroform, and sensation returned instantaneously upon removing the compression, and a perfect recovery was effected. The other case I did not report. The patient was a coloured man by the name of Susey. The operation was performed at Geneva, New York. I removed the posterior portion of the three inferior cervical vertebræ, and found the cord had simply been pressed against the body of the spinal column; the cord was not separated, and pulsated freely. I had great hopes of his recovery, but he died the fourth day. An autopsy showed fracture of the left parietal and occipital bone. A large clot of blood was also found around the foramen magnum, which was beyond doubt the cause of his death.

"The last operation upon Mr. Salsbury has as yet proved of no benefit to him, and it probably never will, as nearly all connection with the brain is obliterated.

"There are two points I wish to call the attention of the profession to in connection with this class of injuries. The first is, that, in all cases which have come under my notice, and I have seen eight, *when blood is taken from a vein of the arm it is arterial.* This being true, the change from arterial to venous blood must be dependent upon the cerebro-spinal action of the nervous system, and it is not absolutely necessary for the change to take place in the passage through the system.

"The second point is, that, immediately after the receipt of the injury, the patient begins to lose flesh, and during the first few weeks becomes much emaciated. Arriving at a certain point the recuperative powers of the system seem to rally, and nutrition appears perfect—the patients gain flesh in about the same proportion as it was lost.

"Why is this, and what is the cause of the suspension and restoration of nutrition? My own opinion is, that suspension of nutrition is *in consequence of the loss of the nervous action.*

"But what restores it? It cannot come from its original source, for the cause is not removed, and there is no sensation or motion below the injury, and no direct communication with the brain."